

VGI Use Case Sub Group Final Report

July 21, 2017

Co-Chairs:

George Bellino
Mike Bourton
Mike Ferry

Use Case Contributors:

Jeremy Whaling
Adam Langton
Lisa McGee
Rich Scholer
Lance Atkins
Niki DeLeon
Hank McGlynn

Hank McGlynn
Fahad Saadat
Stephan Volt
Lance Atkins
Dean Taylor
Bill Boyse
Max Baumhefner

Adam Langton
Joshua McDonald
Cliff Fietsek
Abigail Tinker
Barry Sole
Hank McGlynn

Reviewers who attended three or more meetings:

Lance Atkins
George Bellino
Mike Bourton
Gadi Lenz
Dean Taylor
Elise Keddie
Stephan Voit
Hank McGlynn

Stephanie Palmer
Scott Turik
Jeremy Whaling
Justin Regnier
Jordon Smith
Saadat Fahad
James Tarchinski
Mike Kireev

John Mengwasser
Barry Sole
Lisa McGee
Dave McCreadie
Rich Scholer
Abigail Tinker
Niki DeLeon

Introduction

The Use Case Sub-Group Scope and Process was approved by the VGI Panel on 30th May. An email call to start submitting use cases was made and the first use case sub-group meeting was held on 6th June and the last concluded on 13th July.

The Use Case Sub-Group held 12 meetings for a total of 20 hours and reviewed 77 use case submissions. The average roll call attendance was 18 and average total attendance was 26.

Process

Each Use Case was uploaded into the following read/write Google Drive Space and moved to a sub-folder named based upon the date of the Review.

https://drive.google.com/open?id=0B4_ZRQzLAsLNeXRYcjRKa2FwUjg

This drive space is now read only.

The Use Case Review Meetings was alternatively chaired and minutes taken by Bourton and Bellino.

Each submitter had a scheduled time slot and was allocated up to 15 minutes to present and explain the use case. Then the reviewers were given chance to ask questions. Some questions resulted in an action or correction and re-submission of the use case. (See Minutes)

Use cases were considered to be approved by consensus, if all of the questions were answered.

Then, the use cases were tagged by consensus as created by Langton/Crisostomo¹ using:

- V1G, V2G
- Aggregated, Non-Aggregated
- Fragmented, Unified

No use cases were considered out of scope but tagged as other if they did not fit into any of the Tags.

Tag Summary

V1G	45
V2G	13
Aggregated	49
Non-Aggregated	44
Fragmented	48
Unified	45

A summary of the use cases reviews is shown in the table below:

Use Case	Submitter	Status	Folder Location	Final						
				V1G	V2G	Agg	lo-Ag	Frag	Uni	Oth
Demand Fee Mitigation	Jeremy Whaling	Approved - see minutes	June 8 Review	X	X					X
VGI Use Cases	Adam Langton	See note	June 8 Review							X
Fleet Management	Lisa McGee	Approved	July 6 Review	X	X	X				X
PEVO - Customer Attributes	Rich Scholer	Approved - with added presentat	June 13 Review	X	X	X	X	X	X	
PEV1 - Utilities provides services to Plug-in Electric Vehicles	Rich Scholer	Approved - with added presentat	June 13 Review	X	X	X	X	X	X	
PEV2 - Customer connects Plug-in Electric Vehicle to premise energy portal	Rich Scholer	Approved - with added presentat	June 13 Review	X	X	X	X	X	X	
PEV3 - Customer enrolls in a PEV Demand Dide Mngament Program	Rich Scholer	Approved - with added presentat	June 13 Review	X	X	X	X	X	X	
DC Charge - Discharge system use case	Lance Atkins	Approved	June 15 Review		X	X	X	X	X	
PEV as CA Rule 21 DER	Niki DeLeon	Approved - See Minutes for addit	June 15 Review		X	X	X	X	X	
DER V2G - AC Use case	Hank McGlynn	Approved	June 15 Review		X	X	X	X	X	
DER V2G - DC Use case	Hank McGlynn	Approved	June 15 Review		X	X	X	X	X	
ISO 15118 Use Case Summary	Fahad Saadat	Placeholder	July 11 Review							
15118 Use Cases	Stephan Volt	Place Holder	July 11 Review							
DC EVSE + Telematics use case Diagram	Lance Atkins	Approved	June 27 Review							
EV VGI Use cases summary	Lisa McGee	approved	July 6 Review	X	X	X				X
Understanding the customer	Dean Taylor/Bill Boyse/Max Baumhefner/Adam Langton	Approved	July 6 Review							X
Reduce high kW charging at long dwell charging locations	Dean Taylor/Bill Boyse/Max Baumhefner	Approved	July 6 Review							X
Improved ToU Rates	Dean Taylor/Bill Boyse/Max Baumhefner/Adam Langton	Approved	July 6 Review							X
Overgen VGI Use Case IOU-OEM	Joshua McDonald	Approved	June 20 Review							
Summary of 15118 Use Cases	Cliff Fietssek	Placeholder	July 11 Review							
Summary of use cases IOU - OEM - See 7 use cases below	George Bellino	Approved	June 20 Review	X		X	X	X	X	
Access to Tariffs	George Bellino	Approved	June 20 Review	X	X	X	X	X	X	
Peak Demand Management	George Bellino	Approved	June 20 Review	X	X	X	X	X	X	
Measurement and Monitoring	George Bellino	Withdrawn	June 20 Review	X	X	X	X	X	X	
Voltage Support	George Bellino	See Rule 21 Use case	June 20 Review		X	X	X	X	X	
Spin/Non-Spin Reserve	George Bellino	Withdrawn	June 20 Review							
Over generation support (Distribution asset replacement deferral)	George Bellino	Withdrawn	June 20 Review		X	X	X	X	X	
Frequency Regulation	George Bellino	Withdrawn	June 20 Review	X	X	X	X	X	X	
Demand Charge Mitigation Use Case	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
E- General Registration and Enrollment Process	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
L1 - Customer connects PEV at Home	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
L2 - Customer connects PEV at another Home	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
L3 - Customer connects PEV outside Home Territory	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
L4 - Customer connects PEV at Public Location	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
PR1 - Customer charges the PEV	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
PR2 - Customer discharges the PEV	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
S1 - Cordset	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
S2 - Premise EVSE	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
S3 - Premise EVSE that includes the charger	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
U1 - TOU Program	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
U2 - Discrete Event Program	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
U3 - Real Time Pricing (RTP) Program	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
U4 - Critical Peak Pricing (CPP) Program	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
U5 - Optimized Energy Transfer	Rich Scholer	Approved	June 29 Review	X	X	X	X	X	X	
EPRI OVGIP Use cases	George Bellino	Approved	June 22 Review	X	X	X	X	X	X	
Use Case 1 Automated Utility Electricity Rate Tariff Processing	George Bellino	Approved	June 22 Review	X		X		X		
Use Case 2 Aggregated PEV Demand Response (DR) and Critical Peak Pricing (CPP)	George Bellino	Approved	June 22 Review	X	X		X			
Use Case 3 Interface with Home Energy Management System (HEMS) or Energy Services Int	George Bellino	Approved	June 22 Review	X		X	X	X		
Use Case 4 Interface with Building Energy Management System	George Bellino	Approved	June 22 Review	X		X	X	X		
Use Case 5 Interface with EVSE Network Provider	George Bellino	See Minutes	June 22 Review	X	X		X			
Use Case 6 Real Time Price (RTP) Signal Event Processing	George Bellino	Approved	June 22 Review	X	X		X			
Use Case 7 Optimized Load Management (ISO/IEC 15118)	George Bellino	Approved	June 22 Review	X	X		X			
Use Case 8b Vehicle Roaming	George Bellino	Approved	June 22 Review	X	X		X			
Use Case 9 EVSE Networking Functionality	George Bellino	Approved	June 22 Review	X	X		X			
Use Case 10 Metering and Data Exchange	George Bellino	Approved	June 22 Review	X	X		X			
Residential Peak Demand Management (Evening Ramp)	George Bellino	Approved	June 20 Review							
Value Matrix for DER's (VGI)	Abigail Tinker	Resulted in 7 use cases and requir	June 27 Review							
VGI-Smart Charging use case	Barry Sole	Approved - See minutes	June 27 Review							
1. Dynamic prioritization/coordination	Barry Sole	Approved	June 27 Review	X	X	X	X	X	X	
2. Dynamic charge power	Barry Sole	Approved	June 27 Review	X	X	X	X	X	X	
3. Dynamic reverse power flow (V2G)	Barry Sole	Approved	June 27 Review		X	X	X	X	X	
4. Reduce the cost of charging	Barry Sole	Approved	June 27 Review	X	X	X	X	X	X	
5. Demand Response	Barry Sole	Approved	June 27 Review	X	X	X	X	X	X	
6. Charge Medium/Type	Barry Sole	Approved	June 27 Review	X	X	X	X	X	X	
7. Open	Barry Sole	See Minutes	June 27 Review	X	X	X	X	X	X	
DC Energy Flow	Hank McGlynn	Approved	June 27 Review	X	X		X	X		
				45	13	49	44	48	45	4

Notes

1) Status

Placeholder – Use case not submitted and not presented

Withdrawn – submitted but longer considered e.g. Duplicate or no clear requirements

See Minutes – resulted in reviewer comments that might impact requirements

2) Abigail Tinker's - Value Matrix for DER's (VGI) discussed at the close out meeting resulted in 7 use cases and requirements post last meeting

Wrap-up

The Use Case sub-group has now completed its tasks and this completes its assigned tasks of obtaining VGI use cases, reviewing and tagging. The Submitters have now been requested to extract their requirements as the next new task and submit them to a Stephanie Palmer for compilation as a consolidated set of requirements.